



Year 7

Pathway 2/3/4

Science - Summer Term 1

Learning Intention: Energy, Forces and electricity

Is to inspire a love of learning and curiosity about the world, develop their practical knowledge and skills to use scientific equipment safely and accurately to competently test ideas and demonstrate phenomena. To inform knowledge of the key workings of the human body so that educated opinions and decisions can be made about health, products and stories in the media. To combine basic Maths and English skills in context to help students develop their application skills, to improve transferable skills such as time-keeping, teamwork and develop students' learning skills and independence so they can go on to be life-long learners.

Students will have the opportunity to learn and extend their understanding of the different forms of energy and the different types of forces acting on objects . By using this knowledge they will go on to investigate and find out which foods have the most energy, design electrical circuits and investigate how the size of a parachute can affect the rate of fall.

Key knowledge that should be learned during this SoW

All (Pathway 2)

Most (Pathway 3)

Some (Pathway 4)

Concept:

How to measure and record the energy in different foods. Students will then have the opportunity to evaluate their results to find out there is a link between the calories and energy released. Know how to connect basic electric circuits and that the circuit needs to be closed to make a light bulb work.

Knowledge:

To recall some forms of energy, know that a circuit needs to be complete to work. To recognise some forces acting on an object.

To describe some forms of energy, know that a circuit needs to be complete to work. To consider some forces acting on an object.

To gain understanding of the different forms of energy, compare series and parallel circuits. To compare food groups and their nutritional value and interpret the forces acting on an

			object.
Key Skills:	<ul style="list-style-type: none"> ● Heat water using energy from food. ● Build a simple circuit with some support ● Identify basic components in simple circuits. ● Test different items and with some support find out which are conductors and insulators. 	<ul style="list-style-type: none"> ● To describe some forms of energy ● To explore and report the energy in foods. ● Limited support when taking part in practical task ● To construct a simple electric circuit , identifying and naming its basic parts. ● Test different items and with limited support find out which are conductors and insulators ● Test the rate of fall on different sized Parachutes. 	<ul style="list-style-type: none"> ● To gain understanding of the importance of each food group and their nutritional value ● Little/no support when taking part in practical task ● using results to draw simple conclusions, make ● predictions for new values, suggest improvements and raise further questions; ● Make and test the rate of fall on different sized Parachutes.
Language and/or communication skills:	<ul style="list-style-type: none"> ● Cell ● bulb ● Balanced ● Conductors ● Gravity 	<ul style="list-style-type: none"> ● Switch ● Energy ● Carbohydrates ● Insulators ● Friction ● Buzzer 	<ul style="list-style-type: none"> ● Nutrition ● Vitamins/Minerals ● Parallel ● Protein ● Air resistance
Curricular Links	Links to other learning within the subject are: Science/Resistant Materials/ PSHCE/PE		



Year 7

Pathway 2/3/4

Science - Summer Term

Learning Intention: Scientific enquiry

Is to inspire a love of learning and curiosity about the world, develop their practical knowledge and skills to use scientific equipment safely and accurately to competently test ideas and demonstrate phenomena. To inform knowledge of the key workings of the human body so that educated opinions and decisions can be made about health, products and stories in the media. To combine basic Maths and English skills in context to help students develop their application skills, to improve transferable skills such as time-keeping, teamwork and develop students' learning skills and independence so they can go on to be life-long learners.

STEM Projects

Students will have the opportunity to learn and extend their understanding of 'How Science works'. By using this knowledge they will go on to carry out STEM investigative work.

Key knowledge that should be learned during this SoW

All (Pathway 2)

Most (Pathway 3)

Some (Pathway 4)

Concept:

They will test different hypotheses, measure and record different variables. Students will then have the opportunity to evaluate their results to find out there is a link between the dependent and independent variables. They will also begin to make meaningful connections in maths, science, and technology content to solve real-world problems through hands-on learning activities and creative design.

Knowledge:

To be able to recognise that scientists can use their knowledge of Maths, Engineering and Technology to solve

To be able to understand that scientists can use their knowledge of Maths, Engineering and Technology

To gain understanding of how scientists can use their knowledge of Maths, Engineering and Technology

	problems.	to solve problems.	to solve problems.
Key Skills:	<ul style="list-style-type: none"> ● To investigate which balloon will travel the furthest when moving on different types of strings. ● Making a string telephone ● To use a choice chamber to investigate the choices regarding habitat made by woodlice. ● Use the Model of a teeth investigation to learn how to brush the teeth correctly. ● Fruit painting practical 	<ul style="list-style-type: none"> ● To measure and record data accurately(Runny lava investigation) ● Investigating absorbency of different materials ● To investigate the effects of counter balances on how far a missile travels. ● To investigate the rate at which different types of chocolate melt. ● Build a rocket investigation. ● Limited support when taking part in practical task 	<ul style="list-style-type: none"> ● To measure , record data, and evaluate data accurately(Runny lava investigation) ● Investigating absorbency of different materials ● To investigate the effects of counter balances on how far a missile travels. ● To investigate the rate at which different types of chocolate melt. ● To find out what variable they need to control to get their Rocket to travel the furthest during (Build a rocket investigation). ● Little/no support when taking part in practical task
Language and/or communication skills:	<ul style="list-style-type: none"> ● Control variables ● Prediction 	<ul style="list-style-type: none"> ● Dependent ● Control variables 	<ul style="list-style-type: none"> ● Independent variable ● Gravity ● Air resistance ● Thrust
Curricular Links	Links to other learning within the subject are: Science/Resistant Materials/ PSHCE/PE		

